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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/621,669
Filing Date: July 17, 2003
Appellant(s): DISPENSA ET AL.

Katharyn E. Owen (62,849)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed March 13, 2009 appealing from the Office action mailed October 16, 2008.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

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1. Claims 1-3, 6, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,744,739 B2 (Martin), and further in view of US 7,065,587 B2 (Huitema et al.) and US 6,915,457 B1 (Miller).

As to Claim 1, Martin discloses an invention substantially as claimed, including a method for splitting and sharing routing information among several routers, comprising:

providing a group of routers (Martin – Figure 1 items 58, 59, 70 recite border routers);

each of the routers acting as a single border router in an Internet protocol network, each router comprising a routing table (Martin – Figures 1 & 5 recite boarder routers in an IP network, and Column 2, lines 21-24 recite “route summarization where an internetwork is divided into logical areas, with each area's border router advertising only a single summary route to other areas in order to reduce routing table size”);

splitting the first router's routing table into a plurality of subnetworks (Martin – Figures 1 & 5 recite boarder routers in an IP network, and Column 2, lines 21-24 recite “route summarization where an internetwork is divided into logical areas, with each area's border router advertising only a single summary route to other areas in order to reduce routing table size”);

intended for a one of the plurality of subnetworks (Martin – Figures 1 & 5 recite boarder routers in an IP network, and Column 2, lines 21-24 recite “route summarization where an internetwork is divided into logical areas, with each area's border router advertising only a single summary route to other areas in order to reduce routing table size”);

by informing each of the other routers that it is ready to receive the IP traffic from each of the other routers directed to the one subnetwork (Martin – Figures 1 & 5 recite boarder routers in an IP network, and Column 2, lines 21-24 recite “route summarization

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where an internetwork is divided into logical areas, with each area's border router advertising only a single summary route to other areas in order to reduce routing table size”);

in response to the informing, each of the other routers selecting and removing from their own routing table a route related to the one subnetwork and replacing the removed route by a single route pointing to the informing second router (Martin – Figures 1 & 5 recite boarder routers in an IP network, and Column 2, lines 21-24 recite “route summarization where an internetwork is divided into logical areas, with each area's border router advertising only a single summary route to other areas in order to reduce routing table size”).

Martin does not disclose, but Huitema et al. disclose an invention substantially as claimed, including

comparing the size of the routing tables with a predefined threshold (Huitema et al. – Column 3, lines 10-13 recite determining whether a routing table has reached its limit); and

in response to the size of a routing table of a first of a group of routers exceeding the predefined threshold (Huitema et al. – Column 3, lines 10-13 recite determining whether a routing table has reached its limit and taking some action when the limit is reached):

Martin does not explicitly disclose, but Miller discloses an invention substantially as claimed, including

a second of the routers taking responsibility for routing IP traffic (Miller – Column 8, lines 5-20 recite the example of the B router interface failure, wherein B notifies A to update its router table)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine comparing the size of the routing tables with a predefined threshold; and in response to the size of a routing table of a first of a group of routers exceeding the predefined threshold taught by Huitema et al., with each of the routers acting as a single border router in an Internet protocol network, each router comprising a routing table taught by Martin.

One of ordinary skill in the art at the time the invention was made would have been motivated to adhere to the real life practical limit of the routing table (Huitema et al. – Column 3, lines 10-12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the IP routing methods taught by Miller, with splitting the first router's routing table into a plurality of subnetworks taught by Martin.

One of ordinary skill in the art at the time the invention was made would have been motivated to provide a secondary backup means in case a first router no longer performs its function with respect to routes (Miller, Column 8, lines 5-20).

As to Claim 2, the combination of Martin, Huitema et al. and Miller discloses an invention substantially as claimed, including the method according to the claim 1, comprising the further step of

forwarding IP traffic corresponding to a non-selected route, to a router of the group of routers associated with said non-selected route within the routing table (Miller – Column 6, line 56 to Column 7, line 5 recites the forwarding of IP traffic by specifying the best route for said traffic to travel. The API uses that information to route the traffic).

The motivation and obviousness arguments are the same as in Claim 1.

As to Claim 3, the combination of Martin, Huitema et al. and Miller discloses an invention substantially as claimed, including the method according to claim 1, further comprising

receiving from at least one of the other routers the IP traffic corresponding to the selected routes (Miller – Column 6, lines 45-47 recite the receipt from outside routers the IP traffic); and

routing said IP received traffic (Miller – Column 6, line 56 to Column 7, line 5 recites the forwarding of IP traffic by specifying the best route for said traffic to travel. The API uses that information to route the traffic).

The motivation and obviousness arguments are the same as in Claim 1.

As to Claim 6, the combination of Martin, Huitema et al. and Miller discloses an invention substantially as claimed, including the method according to claim 1,

comprising the preliminary steps of establishing sessions with other routers of the group (Miller – Column 6, lines 56-58 recite the acceptance of routing information from outside routers, which means that the communication session had commenced); and

creating a list of routers of the group (Miller – Column 6, lines 56-58 recite the acceptance of routing information from outside routers and populating the final control plane routing table).

The motivation and obviousness arguments are the same as in Claim 1.

As to Claim 7, the combination of Martin, Huitema et al. and Miller discloses an invention substantially as claimed, including the method according to claim 1,

comprising the preliminary step of establishing sessions with other border routers (Miller – Column 6, lines 56-58 recite the acceptance of routing information from outside routers, which means that the communication session had commenced; Column 3, lines 59-66 recite the communication with other networks).

The motivation and obviousness arguments are the same as in Claim 1.

As to Claim 9, the combination of Martin, Huitema et al. and Miller discloses an invention substantially as claimed, including the method according to claim 1,

wherein routers within the group exchange routing information using Border Gateway Protocol (Miller – Column 7, lines 45-47 recite BGP).

The motivation and obviousness arguments are the same as in Claim 1.

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Martin, Huitema et al. and Miller as applied to claim 1 above, and further in view of US 2002/0118682 A1 (Choe).

As to Claim 5, the combination of Martin, Huitema et al. and Miller discloses an invention substantially as claimed, including the method according to claim 1,

The combination of Martin, Huitema et al. and Miller does not disclose, but Choe discloses an invention substantially as claimed, including wherein the step of selecting routes in the routing table comprises the further step of selecting contiguous IP addresses within a given address range (Choe – Page 3, ¶ [0023] recites the selection of adjacent IP addresses within a prefix range).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine selecting contiguous IP addresses within a given address range taught by Choe, with the step of selecting routes in the routing table taught by the combination of Martin, Huitema et al. and Miller.

One of ordinary skill in the art at the time the invention was made would have been motivated to integrate routing table address selection with hash tables to facilitate high speed lookup (Choe – Page 3, ¶ [0019]).

(10) Response to Argument

I. APPELLANT'S ARGUMENTS WITH RESPECT TO CLAIMS 1-3, 6, 7 AND 9 SHOULD NOT BE FOUND PERSUASIVE BECAUSE THE COMBINATION OF MARTIN, HUITEMA ET AL. AND MILLER TEACH THE CLAIMED LIMITATIONS.

- 1) On page 3 of Appellant's appeal brief, Appellant argues that "[T]he rationale to support a conclusion that the claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed. KSR International Co. v. Teleflex Inc., 550 U.S. ____ (2007)." Examiner respectfully traverses this argument because Examiner cited his motivation and obviousness arguments from each secondary reference in the final Office action dated 10/16/2008. Examiner cited Huitema et al. at Column 3, lines 10-12. Examiner cited Miller at Column 8, lines 5-20.
- 2) On pages 4 and 5 of Appellant's appeal brief, Appellant argues that the claimed limitation which recites "each of the routers acting as a single border router" is not disclosed by the combination of Martin, Huitema et al. and Miller. Appellant summarizes the argument on Page 5 with the statement "[N]o group of routers is disclosed wherein the entire group together acts as one router." Examiner respectfully traverses this argument. The claim language clearly indicates "EACH of the routers ACTING AS A SINGLE BORDER ROUTER." (emphasis added by Examiner) The claim language on its face clearly indicates that EACH router is a SINGLE boarder router, and not, as Appellant argues, that a GROUP of routers ACTS AS A SINGLE border router. During the after-final interview conducted on

January 13th, 2009, the date the notice of appeal was filed, Appellant introduced a proposed modification to Claim 1's claim language as "each of the routers acting together as a single border router..." That proposed modification would have been consistent with Appellant's summarized argument, but that amendment is not claimed. Similarly, had Appellant amended Claim 1 to recite "~~each of~~ said group of ~~the~~ routers acting as a single border router", the amendment would have been consistent with Appellant's summarized argument. However, according to the pending claims, one can only conclude that the claimed limitation "each of the routers acting as a single border router" has but one meaning: that EACH router ACTS AS A SINGLE border router, *and not* that the GROUP of routers acts as a SINGLE border router. Primary reference Martin discloses each router acting as a single border router (Martin – Figures 1 & 5 recite border routers in an IP network). Therefore, Martin discloses the challenged limitation as claimed and Examiner finds this argument unpersuasive.

- 3) On Page 5, last paragraph, of Appellant's appeal brief, Appellant argues that "[T]he area border routers do not summarize routes within the autonomous systems and individual area border routers do not receive routing information from individual subnetworks that have been split from another router's routing table." However, Claim 1 does not recite summarizing routes within autonomous systems, and Claim 1 does not recite receiving routing information from individual subnetworks that have been split from another router's routing table. Simply put, *this argument is not claimed*. Furthermore, on Page 5, Appellant states "Martin is

also silent regarding splitting a routing table into a plurality of subnetworks and informing other routers that it is ready to receive the IP traffic from each of the other routers directed to a subnetwork.” Yet on the same page, two paragraph’s up, Appellant admits that Martin discloses “an area border router can be configured to ANNOUNCE THOSE NETWORKS COMING IN AS THROUGH [sic] THEY WERE A SINGLE, MUCH LARGER NETWORK, which is part of the concept of ROUTE SUMMARIZATION, where A NETWORK IS DIVIDED INTO LOGICAL AREAS with EACH AREA’S BORDER ROUTER ADVERTISING ONLY A SINGLE SUMMARY ROUTE.” Here it is clear that Martin discloses that which Appellant’ asserts Martin is silent on. Namely "splitting a routing table into a plurality of subnetworks (route summarization including dividing a network into logical areas which are subnetworks)" and “informing other routers (announce those networks) that it is ready to receive the IP traffic from each of the other routers directed to a subnetwork.(as though they were a single, much larger network – route summarization)”. In other words, Appellant's understanding of the Martin reference reads on Appellant's argument against Martin. Therefore, Martin discloses the challenged limitation as claimed and Examiner finds this argument unpersuasive.

- 4) On Page 6 of Appellant's appeal brief, Appellant argues that “Huitema et al. is silent regarding comparing the size of the routing table to a predetermined threshold whereby an action ... is taken if the threshold is exceeded.” Appellant seeks to qualify the statement in parens by including limitations taught by other

references as indicated in the final Office action dated 10/16/2008. Yet Appellant admits in the same paragraph that Huitema et al. "when the maximum limit is reached, nodes have to select the entries they intend to keep or drop." The phrase "when the maximum limit is reached" certainly indicates "comparing the size of the routing table to a predetermined threshold", so Huitema et al. is not silent. In addition, the phrase "nodes have to select the entries they intend to keep or drop" certainly indicates "an action is taken if the threshold is exceeded", so Huitema et al. is not silent. Examiner relied on Huitema et al. to disclose the comparison of the size of a routing table against a threshold whereby an action is taken. That is exactly what Huitema et al. disclose (Huitema et al. – Column 3, lines 10-13 recite determining whether a routing table has reached its limit and taking some action when the limit is reached). Therefore, Huitema et al. in combination with Martin and Miller discloses the challenged limitation as claimed and Examiner finds this argument is unpersuasive.

- 5) On Pages 6 and 7 of Appellant's appeal brief, Appellant argues that "[T]he routers exemplified in Martin" (Note: Examiner assumes Appellant meant to argue against Miller, not Martin, since Miller was cited to disclose this limitation) "do not take responsibility of the routing traffic for another router." Examiner cited the Miller reference at Column 8, lines 5-20 to disclose "a second of the routers taking responsibility for routing IP traffic", and that is exactly what Miller discloses at the citation used by the Examiner. The cited passage clearly indicates that router A takes responsibility for router B's failure, and advertises to router C the

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changes router C needs to make to account for router A's taking over that which router B once handled. Therefore, Miller in combination with martin and Huitema et al. discloses the challenged limitation as claimed and Examiner finds this argument unpersuasive.

6) Appellant on Page 7 of the appeal brief argues that dependent claims 2-3, 6, 7 and 9 are allowable as they depend on independent claim 1. However, as illustrated above, independent claim 1 is not allowable. Therefore, Examiner finds this argument unpersuasive.

7) As demonstrated in Section (9) above, all limitations of Claims 1-3, 6, 7 and 9 are disclosed by the combination of Martin, Huitema et al. and Miller. Therefore Examiner believes that the rejection of Claims 1-3, 6, 7 and 9 should be maintained.

II. APPELLANT'S ARGUMENTS WITH RESPECT TO CLAIM 5 SHOULD NOT BE FOUND PERSUASIVE BECAUSE THE COMBINATION OF MARTIN, HUITEMA ET AL., MILLER AND CHOE TEACH THE CLAIMED LIMITATIONS.

8) On page 3 of Appellant's Appeal Brief, Appellant argues that "[T]he rationale to support a conclusion that the claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed. KSR International Co. v. Teleflex Inc., 550 U.S. ____ (2007)." Examiner respectfully traverses this argument because

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Examiner cited his motivation and obviousness arguments from each secondary reference in the final Office action dated 10/16/2008. Examiner cited Huitema et al. at Column 3, lines 10-12. Examiner cited Miller at Column 8, lines 5-20.

Examiner cited Choe at Page 3, ¶ [0019].

- 9) On Pages 7 and 8 of Appellant's appeal brief, Appellant argues that cited reference Choe does not disclose "selecting contiguous IP addresses within a given address range since Choe discloses storing routing entries according to preset prefix length and not contiguousness." Examiner respectfully traverses this argument. Examiner relied on Choe at Page 3, ¶ [0023] which discloses the storing of entries based on IP addresses. Specifically, the lookup method is based on the table generated using IP addresses in which adjacent {contiguous} lookup entries are stored according to IP address information, said entries are in an address range since they are stored according to IP address prefix.

Therefore, Choe in combination with Martin, Huitema et al. and Miller discloses the challenged limitation as claimed and Examiner finds this argument unpersuasive.

- 10) As demonstrated in Section (9) above, all limitations of Claim 5 are disclosed by the combination of Martin, Huitema et al., Miller and Choe. Therefore Examiner believes that the rejection of Claim 5 should be maintained.

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(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Richard G Keehn/

Examiner, Art Unit 2456

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